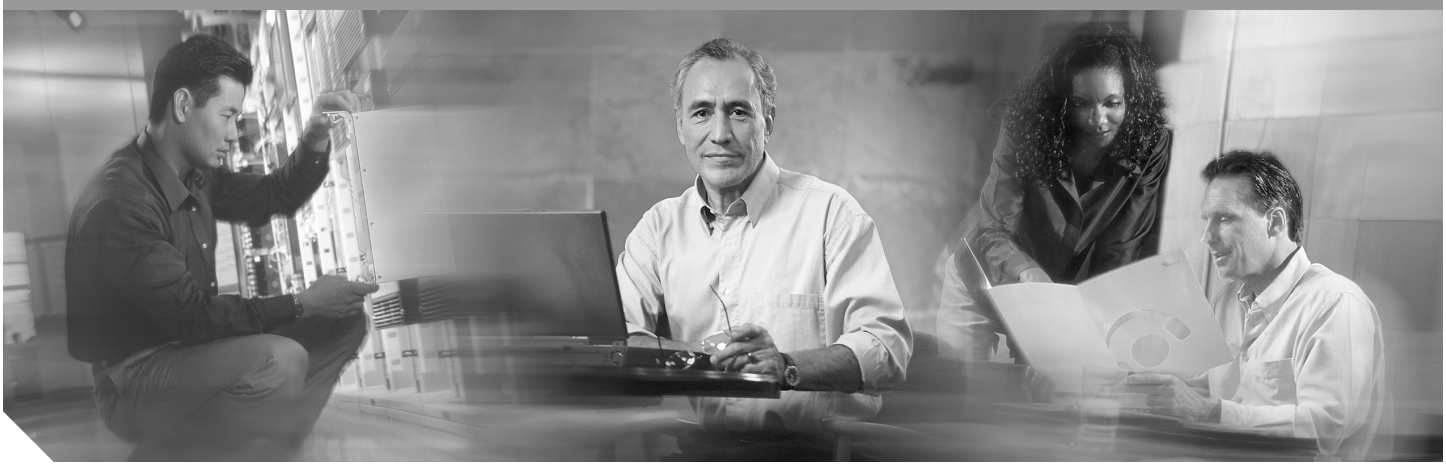
Quick Start Guide



Cisco 3745 Router

INCLUDING LICENSE AND WARRANTY

1 Cisco 90-Day Limited Hardware Warranty Terms
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1 Cisco 90-Day Limited Hardware Warranty Terms

There are special terms applicable to your hardware warranty and various services that you can use during the warranty period. Your formal Warranty Statement, including the warranties and license agreements applicable to Cisco software, is available on Cisco.com. Follow these steps to access and download the *Cisco Information Packet* and your warranty and license agreements from Cisco.com.

1. Launch your browser, and go to this URL:

   http://www.cisco.com/univercd/cc/td/doc/es_inpck/cetrans.htm

   The Warranties and License Agreements page appears.

2. To read the *Cisco Information Packet*, follow these steps:
   a. Click the **Information Packet Number** field, and make sure that the part number 78-5235-03A0 is highlighted.
   b. Select the language in which you would like to read the document.
   c. Click **Go**. The Cisco Limited Warranty and Software License page from the Information Packet appears.
   d. Read the document online, or click the **PDF** icon to download and print the document in Adobe Portable Document Format (PDF).

   Note You must have Adobe Acrobat Reader to view and print PDF files. You can download the reader from Adobe's website: http://www.adobe.com

3. To read translated and localized warranty information about your product, follow these steps:
   a. Enter this part number in the Warranty Document Number field: 78-5236-01C0
   b. Select the language in which you would like to read the document.
   c. Click **Go**. The Cisco warranty page appears.
   d. Review the document online, or click the **PDF** icon to download and print the document in Adobe Portable Document Format (PDF).

You can also contact the Cisco service and support website for assistance:

http://www.cisco.com/public/Support_root.shtml.

Duration of Hardware Warranty

Ninety (90) days.

Replacement, Repair, or Refund Policy for Hardware

Cisco or its service center will use commercially reasonable efforts to ship a replacement part within ten (10) working days after receipt of a Return Materials Authorization (RMA) request. Actual delivery times can vary, depending on the customer location.

Cisco reserves the right to refund the purchase price as its exclusive warranty remedy.

To Receive a Return Materials Authorization (RMA) Number

Contact the company from whom you purchased the product. If you purchased the product directly from Cisco, contact your Cisco Sales and Service Representative.

Complete the information below, and keep it for reference:

Company product purchased from	
Company telephone number	
Product model number	
Product serial number	
Maintenance contract number	

2 Documents, Equipment, and Tools

User Documentation

All the documents described here are available online on Cisco.com. To be sure of obtaining the latest information, you should access the online documentation.

To view or print a document in its original page format, access the online document, and click on the PDF icon.

For information about accessing user documentation, see the "Where to Go Next" section on page 24.

Items Included with Cisco 3745 Routers

- Rack-mount brackets; ground lug; power cords
- RJ-45-to-DB-9 adapter cable for console connection
- RJ-45-to-DB-25 adapter cable for modem connection
- Ethernet cables for LAN interface (two)
- Cisco Information Packet
- Cisco 90 Day Limited Hardware Warranty Terms
- *Cisco 2600 Series, Cisco 3600 Series, and Cisco 3700 Series Regulatory Compliance and Safety Information* document
- *Cisco Router and Security Device Manager (SDM) Quick Start Guide* document (if VPN bundle is installed on your router)
- *Cisco 3745 Modular Routers Quick Start Guide* (this document)

Items Not Included

Individual items in this list may be required for your particular application:

- Screws for installing the chassis in a rack
- PC running terminal emulation software for administrative access, or modem for remote administrative access
- Cables for WAN and voice interfaces and for additional LAN interfaces
- Tools: Number 2 Phillips screwdriver; ESD-preventive wrist strap

3 Install Chassis

Safety Information

For safety information you need to know before working on your Cisco router, refer to the *Cisco 2600 Series, Cisco 3600 Series, and Cisco 3700 Series Regulatory Compliance and Safety Information* document that accompanied this device.

Note To see translations of the warnings that appear in this publication, refer to the *Cisco 2600 Series, Cisco 3600 Series, and Cisco 3700 Series Regulatory Compliance and Safety Information* document.

Warning Definition

IMPORTANT SAFETY INSTRUCTIONS

Warning **This warning symbol means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents. To see translations of the warnings that appear in this publication, refer to the translated safety warnings that accompanied this device.** Statement 1071

SAVE THESE INSTRUCTIONS

Waarschuwing **BELANGRIJKE VEILIGHEIDSINSTRUCTIES**

Dit waarschuwingssymbool betekent gevaar. U verkeert in een situatie die lichamelijk letsel kan veroorzaken. Voordat u aan enige apparatuur gaat werken, dient u zich bewust te zijn van de bij elektrische schakelingen betrokken risico's en dient u op de hoogte te zijn van de standaard praktijken om ongelukken te voorkomen. Voor een vertaling van de waarschuwingen die in deze publicatie verschijnen, dient u de vertaalde veiligheidswaarschuwingen te raadplegen die bij dit apparaat worden geleverd.

Opmerking BEWAAR DEZE INSTRUCTIES.

Varoitus **TÄRKEITÄ TURVALLISUUTEEN LIITTYVIÄ OHJEITA**

Tämä varoitusmerkki merkitsee vaaraa. Olet tilanteessa, joka voi johtaa ruumiinvammaan. Ennen kuin työskentelet minkään laitteiston parissa, ota selvää sähkökytkentöihin liittyvistä vaaroista ja tavanomaisista onnettomuuksien ehkäisykeinoista. Tässä asiakirjassa esitettyjen varoitusten käännökset löydät laitteen mukana toimitetuista ohjeista.

Huomautus SÄILYTÄ NÄMÄ OHJEET

Attention **IMPORTANTES INFORMATIONS DE SÉCURITÉ**

Ce symbole d'avertissement indique un danger. Vous vous trouvez dans une situation pouvant causer des blessures ou des dommages corporels. Avant de travailler sur un équipement, soyez conscient des dangers posés par les circuits électriques et familiarisez-vous avec les procédures couramment utilisées pour éviter les accidents. Pour prendre connaissance des traductions d'avertissements figurant dans cette publication, consultez les consignes de sécurité traduites qui accompagnent cet appareil.

Remarque CONSERVEZ CES INFORMATIONS

Warnung **WICHTIGE SICHERHEITSANWEISUNGEN**

Dieses Warnsymbol bedeutet Gefahr. Sie befinden sich in einer Situation, die zu einer Körperverletzung führen könnte. Bevor Sie mit der Arbeit an irgendeinem Gerät beginnen, seien Sie sich der mit elektrischen Stromkreisen verbundenen Gefahren und der Standardpraktiken zur Vermeidung von Unfällen bewusst. Übersetzungen der in dieser Veröffentlichung enthaltenen Warnhinweise sind im Lieferumfang des Geräts enthalten.

Hinweis BEWAHREN SIE DIESE SICHERHEITSANWEISUNGEN AUF

Avvertenza **IMPORTANTI ISTRUZIONI SULLA SICUREZZA**

Questo simbolo di avvertenza indica un pericolo. La situazione potrebbe causare infortuni alle persone. Prima di intervenire su qualsiasi apparecchiatura, occorre essere al corrente dei pericoli relativi ai circuiti elettrici e conoscere le procedure standard per la prevenzione di incidenti. Per le traduzioni delle avvertenze riportate in questo documento, vedere le avvertenze di sicurezza che accompagnano questo dispositivo.

Nota CONSERVARE QUESTE ISTRUZIONI

Advarsel **VIKTIGE SIKKERHETSINSTRUKSJONER**

Dette varselssymbolet betyr fare. Du befinner deg i en situasjon som kan forårsake personskade. Før du utfører arbeid med utstyret, bør du være oppmerksom på farene som er forbundet med elektriske kretssystemer, og du bør være kjent med vanlig praksis for å unngå ulykker. For å se oversettelser av advarslene i denne publikasjonen, se de oversatte sikkerhetsvarslene som følger med denne enheten.

Merk TA VARE PÅ DISSE INSTRUKSJONENE

Aviso **INSTRUÇÕES IMPORTANTES DE SEGURANÇA**

Este símbolo de aviso significa perigo. O utilizador encontra-se numa situação que poderá ser causadora de lesões corporais. Antes de iniciar a utilização de qualquer equipamento, tenha em atenção os perigos envolvidos no manuseamento de circuitos eléctricos e familiarize-se com as práticas habituais de prevenção de acidentes. Para ver traduções dos avisos incluídos nesta publicação, consulte os avisos de segurança traduzidos que acompanham este dispositivo.

Nota GUARDE ESTAS INSTRUÇÕES

¡Advertencia! **INSTRUCCIONES IMPORTANTES DE SEGURIDAD**

Este símbolo de aviso indica peligro. Existe riesgo para su integridad física. Antes de manipular cualquier equipo, considere los riesgos de la corriente eléctrica y familiarícese con los procedimientos estándar de prevención de accidentes. Vea las traducciones de las advertencias que acompañan a este dispositivo.

Nota GUARDE ESTAS INSTRUCCIONES

Varning! **VIKTIGA SÄKERHETSANVISNINGAR**

Denna varningssignal signalerar fara. Du befinner dig i en situation som kan leda till personskada. Innan du utför arbete på någon utrustning måste du vara medveten om farorna med elkretsar och känna till vanliga förfaranden för att förebygga olyckor. Se översättningarna av de varningsmeddelanden som finns i denna publikation, och se de översatta säkerhetsvarningarna som medföljer denna anordning.

OBS! SPARA DESSA ANVISNINGAR

Figyelem

FONTOS BIZTONSÁGI ELOÍRÁSOK

Ez a figyelmezeto jel veszélyre utal. Sérülésveszélyt rejto helyzetben van. Mielott bármely berendezésen munkát végezte, legyen figyelemmel az elektromos áramkörök okozta kockázatokra, és ismerkedjen meg a szokásos balesetvédelmi eljárásokkal. A kiadványban szereplo figyelmeztetések fordítása a készülékhez mellékelt biztonsági figyelmeztetések között található; a fordítás az egyes figyelmeztetések végén látható szám alapján keresheto meg.

ORIZZE MEG EZEKET AZ UTASÍTÁSOKAT!

Предупреждение

ВАЖНЫЕ ИНСТРУКЦИИ ПО СОБЛЮДЕНИЮ ТЕХНИКИ БЕЗОПАСНОСТИ

Этот символ предупреждения обозначает опасность. То есть имеет место ситуация, в которой следует опасаться телесных повреждений. Перед эксплуатацией оборудования выясните, каким опасностям может подвергаться пользователь при использовании электрических цепей, и ознакомьтесь с правилами техники безопасности для предотвращения возможных несчастных случаев. Воспользуйтесь номером заявления, приведенным в конце каждого предупреждения, чтобы найти его переведенный вариант в переводе предупреждений по безопасности, прилагаемом к данному устройству.

СОХРАНИТЕ ЭТИ ИНСТРУКЦИИ

警告

重要的安全性说明

此警告符号代表危险。您正处于可能受到严重伤害的工作环境中。在您使用设备开始工作之前，必须充分意识到触电的危险，并熟练掌握防止事故发生的标准工作程序。请根据每项警告结尾提供的声明号码来找到此设备的安全性警告说明的翻译文本。

请保存这些安全性说明

警告

安全上の重要な注意事項

「危険」の意味です。人身事故を予防するための注意事項が記述されています。装置の取り扱い作業を行うときは、電気回路の危険性に注意し、一般的な事故防止策に留意してください。警告の各国語版は、各注意事項の番号を基に、装置に付属の「Translated Safety Warnings」を参照してください。

これらの注意事項を保管しておいてください。

주의

중요 안전 지침

이 경고 기호는 위험을 나타냅니다. 작업자가 신체 부상을 일으킬 수 있는 위험한 환경에 있습니다. 장비에 작업을 수행하기 전에 전기 회로와 관련된 위험을 숙지하고 표준 작업 관례를 숙지하여 사고를 방지하십시오. 각 경고의 마지막 부분에 있는 경고문 번호를 참조하여 이 장치와 함께 제공되는 번역된 안전 경고문에서 해당 번역문을 찾으십시오.

이 지시 사항을 보관하십시오.

Aviso

INSTRUÇÕES IMPORTANTES DE SEGURANÇA

Este símbolo de aviso significa perigo. Você se encontra em uma situação em que há risco de lesões corporais. Antes de trabalhar com qualquer equipamento, esteja ciente dos riscos que envolvem os circuitos elétricos e familiarize-se com as práticas padrão de prevenção de acidentes. Use o número da declaração fornecido ao final de cada aviso para localizar sua tradução nos avisos de segurança traduzidos que acompanham o dispositivo.

GUARDE ESTAS INSTRUÇÕES

Advarsel

VIGTIGE SIKKERHEDSANVISNINGER

Dette advarselssymbol betyder fare. Du befinder dig i en situation med risiko for legemesbeskadigelse. Før du begynder arbejde på udstyr, skal du være opmærksom på de involverede risici, der er ved elektriske kredsløb, og du skal sætte dig ind i standardprocedurer til undgåelse af ulykker. Brug erklæringsnummeret efter hver advarsel for at finde oversættelsen i de oversatte advarsler, der fulgte med denne enhed.

GEM DISSE ANVISNINGER

تحذير

إرشادات الأمان الهامة

يوضح رمز التحذير هذا وجود خطر. وهذا يعني أنك متواجد في مكان قد ينتج عنه التعرض لإصابات. قبل بدء العمل، احذر مخاطر التعرض للصدمات الكهربائية وكن على علم بالإجراءات القياسية للحيلولة دون وقوع أي حوادث. استخدم رقم البيان الموجود في أخر كل تحذير لتحديد مكان ترجمته داخل تحذيرات الأمان المترجمة التي تأتي مع الجهاز.
قم بحفظ هذه الإرشادات

Upozorenje

VAŽNE SIGURNOSNE NAPOMENE

Ovaj simbol upozorenja predstavlja opasnost. Nalazite se u situaciji koja može prouzročiti tjelesne ozljede. Prije rada s bilo kojim uređajem, morate razumjeti opasnosti vezane uz električne sklopove, te biti upoznati sa standardnim načinima izbjegavanja nesreća. U prevedenim sigurnosnim upozorenjima, priloženima uz uređaj, možete prema broju koji se nalazi uz pojedino upozorenje pronaći i njegov prijevod.

SAČUVAJTE OVE UPUTE

Upozornění

DŮLEŽITÉ BEZPEČNOSTNÍ POKYNY

Tento upozorňující symbol označuje nebezpečí. Jste v situaci, která by mohla způsobit nebezpečí úrazu. Před prací na jakémkoliv vybavení si uvědomte nebezpečí související s elektrickými obvody a seznamte se se standardními opatřeními pro předcházení úrazům. Podle čísla na konci každého upozornění vyhledejte jeho překlad v přeložených bezpečnostních upozorněních, která jsou přiložena k zařízení.

USCHOVEJTE TYTO POKYNY

Προειδοποίηση

ΣΗΜΑΝΤΙΚΕΣ ΟΔΗΓΙΕΣ ΑΣΦΑΛΕΙΑΣ

Αυτό το προειδοποιητικό σύμβολο σημαίνει κίνδυνο. Βρίσκεστε σε κατάσταση που μπορεί να προκαλέσει τραυματισμό. Πριν εργαστείτε σε οποιοδήποτε εξοπλισμό, να έχετε υπόψη σας τους κινδύνους που σχετίζονται με τα ηλεκτρικά κυκλώματα και να έχετε εξοικειωθεί με τις συνήθεις πρακτικές για την αποφυγή ατυχημάτων. Χρησιμοποιήστε τον αριθμό δήλωσης που παρέχεται στο τέλος κάθε προειδοποίησης, για να εντοπίσετε τη μετάφρασή της στις μεταφρασμένες προειδοποιήσεις ασφαλείας που συνοδεύουν τη συσκευή.

ΦΥΛΑΞΤΕ ΑΥΤΕΣ ΤΙΣ ΟΔΗΓΙΕΣ

אזהרה

הוראות בטיחות חשובות

סימן אזהרה זה מסמל סכנה. אתה נמצא במצב העלול לגרום לפציעה. לפני שתעבוד עם ציוד כלשהו, עליך להיות מודע לסכנות הכרוכות במעגלים חשמליים ולהכיר את הנהלים המקובלים למניעת תאונות. השתמש במספר ההוראה המסופק בסופה של כל אזהרה כד לאתר את התרגום באזהרות הבטיחות המתורגמות שמצורפות להתקן.

שמור הוראות אלה

Opomena

ВАЖНИ БЕЗБЕДНОСНИ НАПАТСТВИЈА

Симболот за предупредување значи опасност. Се наоѓате во ситуација што може да предизвика телесни повреди. Пред да работите со опремата, бидете свесни за ризикот што постои кај електричните кола и треба да ги познавате стандардните постапки за спречување на несреќни случаи. Искористете го бројот на изјавата што се наоѓа на крајот на секое предупредување за да го најдете неговиот период во преведените безбедносни предупредувања што се испорачани со уредот.

ЧУВАЈТЕ ГИ ОВИЕ НАПАТСТВИЈА

Ostrzeżenie

WAŻNE INSTRUKCJE DOTYCZĄCE BEZPIECZEŃSTWA

Ten symbol ostrzeżenia oznacza niebezpieczeństwo. Zachodzi sytuacja, która może powodować obrażenia ciała. Przed przystąpieniem do prac przy urządzeniach należy zapoznać się z zagrożeniami związanymi z układami elektrycznymi oraz ze standardowymi środkami zapobiegania wypadkom. Na końcu każdego ostrzeżenia podano numer, na podstawie którego można odszukać tłumaczenie tego ostrzeżenia w dołączonym do urządzenia dokumencie z tłumaczeniami ostrzeżeń.

NINIEJSZE INSTRUKCJE NALEŻY ZACHOWAĆ

Upozornenie

DÔLEŽITÉ BEZPEČNOSTNÉ POKYNY

Tento varovný symbol označuje nebezpečenstvo. Nachádzate sa v situácii s nebezpečenstvom úrazu. Pred prácou na akomkoľvek vybavení si uvedomte nebezpečenstvo súvisiace s elektrickými obvodmi a oboznámte sa so štandardnými opatreniami na predchádzanie úrazom. Podľa čísla na konci každého upozornenia vyhľadajte jeho preklad v preložených bezpečnostných upozorneniach, ktoré sú priložené k zariadeniu.

USCHOVAJTE SI TENTO NÁVOD

Warning **This unit is intended for installation in restricted access areas. A restricted access area can be accessed only through the use of a special tool, lock and key, or other means of security.** Statement 1017

Warning **Before working on equipment that is connected to power lines, remove jewelry (including rings, necklaces, and watches). Metal objects will heat up when connected to power and ground and can cause serious burns or weld the metal object to the terminals.** Statement 43

Warning **This equipment has been designed for connection to TN and IT power systems.** Statement 1007

Warning **To avoid electric shock, do not connect safety extra-low voltage (SELV) circuits to telephone-network voltage (TNV) circuits. LAN ports contain SELV circuits, and WAN ports contain TNV circuits. Some LAN and WAN ports both use RJ-45 connectors. Use caution when connecting cables.** Statement 1021

Warning **This equipment must be grounded. Never defeat the ground conductor or operate the equipment in the absence of a suitably installed ground conductor. Contact the appropriate electrical inspection authority or an electrician if you are uncertain that suitable grounding is available.** Statement 1024

Warning **Blank faceplates and cover panels serve three important functions: they prevent exposure to hazardous voltages and currents inside the chassis; they contain electromagnetic interference (EMI) that might disrupt other equipment; and they direct the flow of cooling air through the chassis. Do not operate the system unless all cards, faceplates, front covers, and rear covers are in place.** Statement 1029

Warning **Only trained and qualified personnel should be allowed to install, replace, or service this equipment.** Statement 1030

Warning **To prevent personal injury or damage to the chassis, never attempt to lift or tilt the chassis using the handles on modules (such as power supplies, fans, or cards); these types of handles are not designed to support the weight of the unit.** Statement 1032

Warning **Ultimate disposal of this product should be handled according to all national laws and regulations.** Statement 1040

Installing the Chassis

You can set the chassis on a desktop or install it in a rack. See the applicable instructions in the following sections:

- Rack-Mounting the Chassis, page 10
- Installing on a Desktop, page 11

Note Cisco 3745 routers are not designed for wall-mounting.

Rack-Mounting the Chassis

The standard accessory kit contains brackets for mounting the chassis in a 19-inch rack. You can order an optional accessory kit with brackets and instructions for mounting the chassis in a 23- or 24-inch rack.

You can mount the chassis in the following ways:

- Front panel forward
- Rear panel forward
- Center mount with either front or rear panel forward

Attaching Brackets

Attach the mounting brackets to the chassis as shown in Figure 1, Figure 2, or Figure 3, using the screws provided in the bracket kit. Attach the second bracket to the opposite side of the chassis. Use a number 2 Phillips screwdriver to install the bracket screws.

Note Some 19-inch racks have power strips on the rear vertical rails that block cable access to power supplies. Be sure to choose an orientation that provides unrestricted access to the rear panel.

Figure 1 Bracket Installation—Front Panel Forward

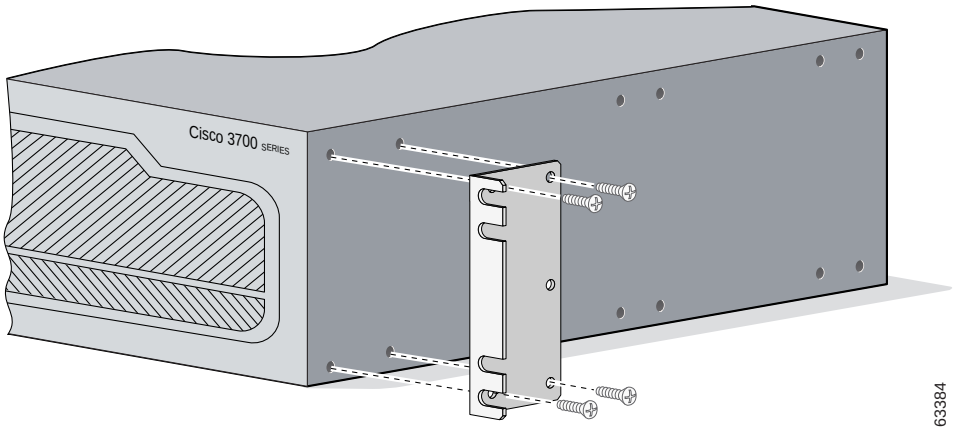


Figure 2 Bracket Installation—Rear Panel Forward

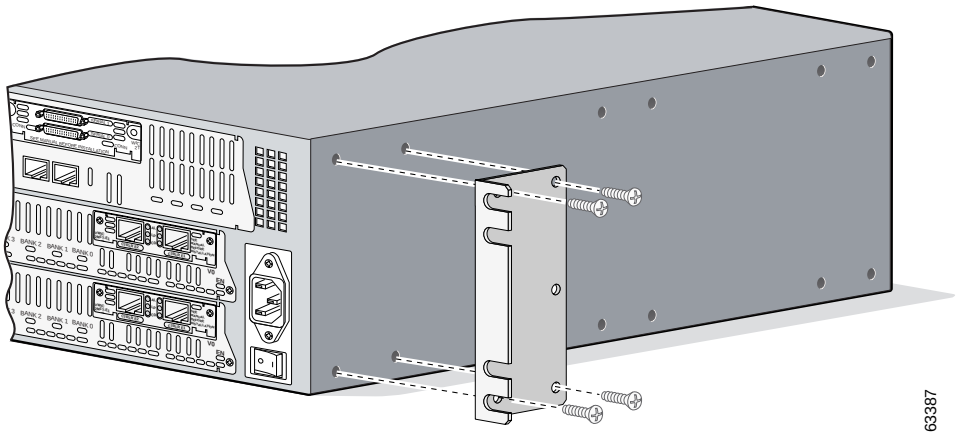
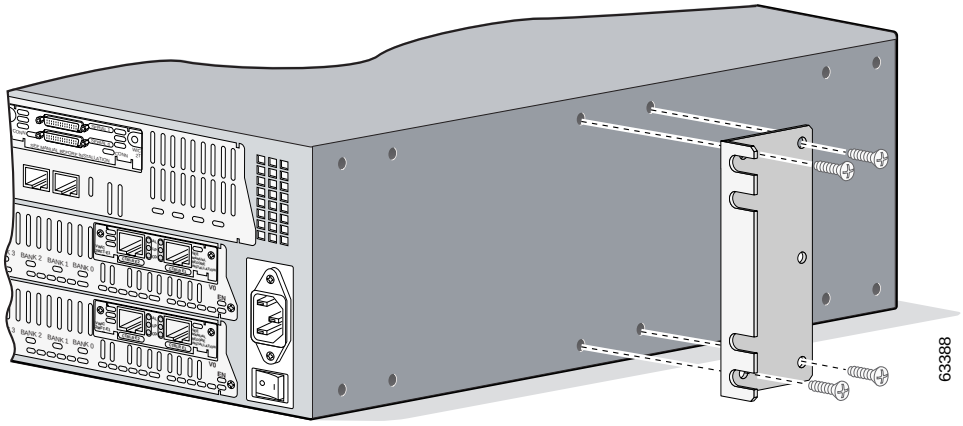


Figure 3 Bracket Installation—Rear Panel Forward, Center-Mount Rack



Note The brackets can also be installed with the front panel forward.

Installing the Chassis in a Rack

Install the chassis in the rack. Rack-mounting screws are not provided with the router. Use two screws for each side (supplied with the rack).

Installing on a Desktop

Caution If you place the Cisco 3745 on a desktop, do not place anything on top of the router that weighs more than 10 pounds (4.5 kg). Excessive weight on top could damage the chassis.

Grounding the Chassis

You must connect the chassis to a reliable earth ground; the ground wire must be installed in accordance with local electrical safety standards.

- For NEBS-compliant grounding, use AWG 6 (13 mm^2) wire and the ground lug provided in the accessory kit.
- For NEC-compliant grounding, use AWG 14 (2 mm^2) or larger wire and a user-supplied ring terminal.
- For EN/IEC 60950-compliant grounding, use AWG 18 (1 mm^2) or larger wire and a user-supplied ring terminal.

To connect the chassis to a reliable earth ground, perform the following steps:

Step 1 Strip one end of the ground wire to the length required for the ground lug or terminal.

- For the NEBS ground lug—approximately 0.75 in. (20 mm)
- For user-provided ring terminal—as required

Step 2 Crimp the ground wire to the ground lug or ring terminal, using a crimp tool of the appropriate size.

Step 3 Attach the ground lug or ring terminal to the chassis as shown in Figure 4 or Figure 5. For the ground lug, use the two screws with captive locking washers provided. For a ring terminal, use one of the screws provided. Use a number 2 Phillips screwdriver, and tighten the screws to a torque of 8 to 10 in-lb (0.9 to 1.1 N-m).

Step 4 Connect the other end of the ground wire to a grounding point at your site.

Figure 4 NEBS-Compliant Chassis Ground Connection Using Ground Lug

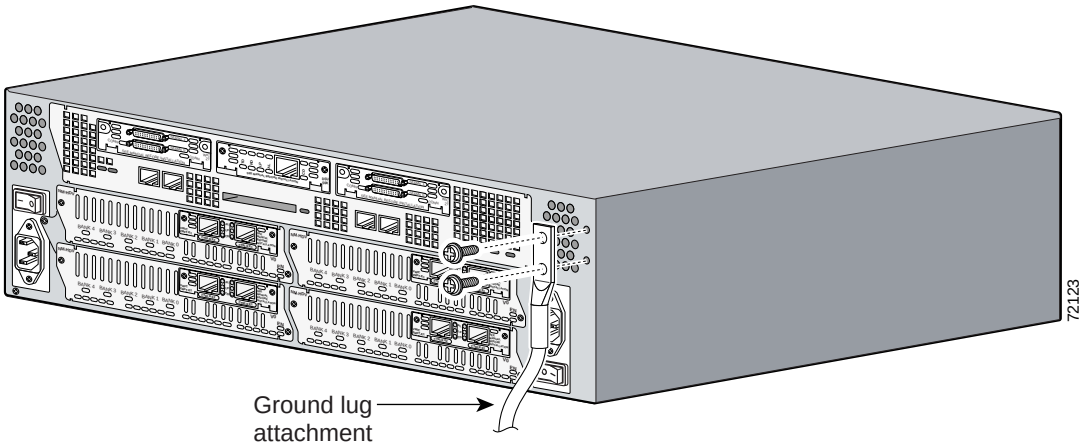
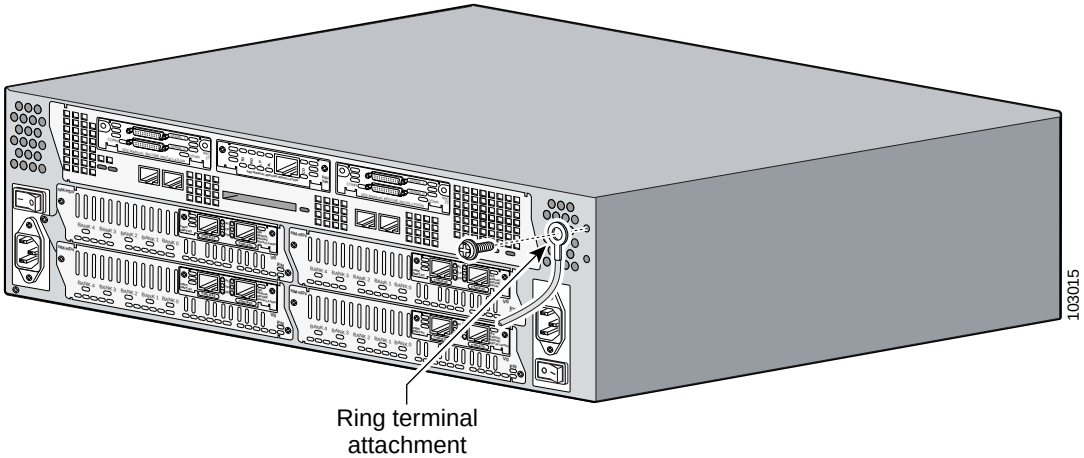


Figure 5 Chassis Ground Connection Using Ring Terminal



4 Connect Cables

Warning **Do not work on the system, or connect or disconnect cables during periods of lightning activity.** Statement 1001

Caution To comply with Telcordia NEBS GR-1089-Core and EN 300386 requirements, you must use foil twisted-pair cable that is properly grounded at both ends.

System Management Connections

The connections described in Table 1 provide system management access.

Table 1 System Management Connections

Port	Color	Connected to:	Cable
Console	Light blue	PC or ASCII terminal communication port (usually labeled COM)	RJ-45-to-DB-9 adapter cable
Auxiliary	Black	Modem for remote access	RJ-45-to-DB-25 adapter cable

Power Connections

Warning **Read the installation instructions before connecting the system to the power source.** Statement 1004

Note The installation must comply with all required electrical codes applicable at the installation site.

Connecting Routers to AC Power

If your router uses AC power, connect it to a 15 A, 120 VAC (10 A, 240 VAC) circuit with overcurrent protection.

Note The input voltage tolerance limits for AC power are 85 and 264 VAC.

Warning **AC connected units must have a permanent ground connection in addition to the power cable ground wire. NEBS-compliant grounding satisfies this requirement.** Statement 284

Warning **This product relies on the building's installation for short-circuit (overcurrent) protection. Ensure that the protective device is rated not greater than:**
15A, 120VAC (10A, 240VAC). Statement 1005

Connecting Routers to DC Power

If your router has a DC-input power supply, follow the directions in this section for proper wiring.

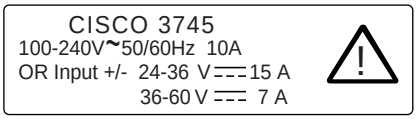
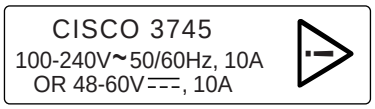
Warning **This product relies on the building's installation for short-circuit (overcurrent) protection. Ensure that the protective device is rated not greater than: 20A, 60VDC.** Statement 1005

Warning **Use copper conductors only.** Statement 1025

DC Wiring Requirements

A Cisco 3745 router with a DC-input power supply requires copper wire for the power connections. Table 2 summarizes the wiring requirements.

Table 2 DC Wiring Requirements for Cisco 3745 Routers

Installed Power Supply	DC Input	DC Input Wire Size	Safety Ground Wire Size	Wire Terminal (Lug)	Overcurrent Protection
Nominal 24/48 VDC[1] Identified by the following printed label: 	24 - 36 V, 15 A	AWG 12 (3.0 mm^2)	AWG 12 (3.0 mm^2), minimum	Amp/Tyco No. 52961 or equivalent	20 A maximum
	36 - 60 V, 7 A	AWG 12 or 14 (3.0 or 2.0 mm^2)	AWG 12 (3.0 mm^2), minimum	For AWG 12: Amp/Tyco No. 52961 or equivalent For AWG 14: Molex No. 19099-0017 or equivalent	20 A maximum
Nominal 48 VDC[2] Identified by the following printed label: 	48 - 60 V, 10 A	AWG 14 or 16 (2.0 or 1.2 mm^2)	AWG 14 (2.0 mm^2), minimum	For AWG 14 or 16: Molex No. 19099-0017 or equivalent	20 A maximum

1. The input voltage tolerance limits for nominal 24/48 V power supplies are 18 and 72 VDC.
2. The input voltage tolerance limits for nominal 48 V power supplies are 38 and 72 VDC.

Wiring Procedure for DC Input

To connect the router to a DC power source, perform the following steps:

Step 1 Remove power from the DC circuit. To ensure that power is removed from the DC circuit, locate the circuit breaker for the DC circuit, switch the circuit breaker to the OFF position, and tape the circuit-breaker switch in the OFF position.

Warning **Before performing any of the following procedures, ensure that power is removed from the DC circuit.** Statement 1003

Tip Secure all power cabling when installing this unit to avoid disturbing field-wiring connections.

Step 2 Strip the wires to the appropriate length for the terminals. The strip length is 1/8 to 3/16 inch (3 to 5 mm) for Molex number 19073-0009 terminals and for AMP/Tyco number 52961 terminals.

Step 3 Crimp the terminals onto the DC power input wires.

Warning **When stranded wiring is required, use approved wiring terminations, such as closed-loop or spade-type with upturned lugs. These terminations should be the appropriate size for the wires and should clamp both the insulation and conductor.** Statement 1002

Step 4 Remove the plastic cover from the terminal block. Save it for reinstallation after you finish wiring.

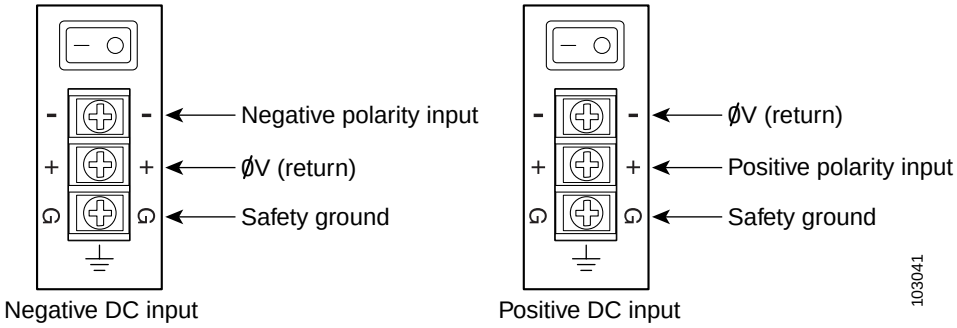
Step 5 Connect the DC power input wires to the terminal block, as shown in Figure 6.

Warning **The illustration shows the DC power supply terminal block. Wire the DC power supply as illustrated. The proper wiring sequence is ground to ground, positive to positive, and negative to negative. The ground wire should always be connected first and disconnected last.** Statement 239

Warning **An exposed wire lead from a DC-input power source can conduct harmful levels of electricity. Be sure that no exposed portion of the DC-input power source wire extends from the terminal block plug.** Statement 122

Caution Do not overtorque the terminal block screws. The recommended torque is 8.0 ± 0.5 in-lb (0.9 ± 0.05 N-m).

Figure 6 Terminal Block Connections for DC Input Power



Step 6 Install the plastic cover over the terminal block.

Warning **The safety cover is an integral part of the product. Do not operate the unit without the safety cover installed. Operating the unit without the cover in place will invalidate the safety approvals and pose a risk of fire and electrical hazards.** Statement 117

Step 7 Secure the wires using cable ties.

Step 8 If your router has a second power supply installed, repeat Step 1 through Step 7 for the second power supply.

Step 9 Turn on power to the DC circuit.

Connecting Routers to the Cisco Redundant Power System

If your router uses the Cisco Redundant Power System (RPS), refer to the *Cisco RPS Hardware Installation Guide* for instructions about the power connections.To locate these documents, see the "Where to Go Next" section on page 24.

WAN, LAN, and Voice Connections

The connections and cables listed here are described in detail in the following documents:

- *Cisco 3700 Series Hardware Installation Guide*
- *Cisco Network Modules Hardware Installation Guide*
- *Cisco Interface Cards Installation Guide*
- *Cisco Modular Access Router Cable Specifications*

For information about accessing these documents, see the "Where to Go Next" section on page 24.

Table 3 summarizes some typical WAN, LAN, and voice connections for Cisco 3745 routers.

Table 3 WAN, LAN, and Voice Connections

Port or Connection	Port Type, Color	Connected to:	Cable
FastEthernet	RJ-45, yellow,	Ethernet hub or switch	Straight-through Ethernet
T1/E1 WAN	RJ-48C/CA81A, blue	T1 or E1 network	RJ-48 T1
Cisco serial	60-pin D-sub	CSU/DSU and serial network or equipment	Cisco serial transition cable that matches the signaling protocol (EIA/TIA-232, EIA/TIA-449, V.35, X.21, or EIA/TIA-530) and the serial port operating mode (DTE or DCE).[1]
Cisco Smart serial	Cisco Smart compact connector, blue	CSU/DSU and serial network or equipment. For WIC-2T and WIC-2A/S only	
DSL	RJ-11C/CA11A, lavender	Network demarcation device for service provider's DSL interface	RJ-11
T1 digital voice	RJ-48C/CA81A, tan	Digital PBX	RJ-48 T1 cable
Analog voice FXS	RJ-11, gray	Telephone, fax	RJ-11
Analog voice FXO	RJ-11, pink	Central office, analog PBX	RJ-11
Analog voice E&M	RJ-11, brown	Analog PBX	RJ-11
BRI S/T WAN (external NT1)	RJ-48C/CA81A, red	NT1 device or private integrated network exchange (PINX)	RJ-48
BRI U WAN (built-in NT1)	RJ-49C/CA-A11, orange	ISDN network	RJ-49
CT1/PRI	T1	External T1 CSU	DB-15 T1 serial cable
CT1/PRI-CSU	T1	RJ-48C/CA81A interface	RJ-48 straight-through
CE1/PRI	E1	E1 network	DB-15 to BNC, DB-15 to DB-15, DB-15 to twinax, or DB-15 to RJ-45
56/64-kbps DSU/CSU	8-pin modular, blue	RJ-48S interface	RJ-48 straight-through

1. See the *Cisco Modular Access Router Cable Specifications* document for information about selecting these cables.

5 Power Up the Router

Checklist for Power-Up

You are ready to power on the Cisco router if the following steps are completed:

- The chassis is securely mounted.
- Power and interface cables are connected.
- Your PC terminal emulation program is configured for 9600 baud, 8 data bits, 1 stop bit, and no parity.
- You have selected passwords for access control.
- You have determined the IP addresses for the Ethernet and serial interfaces.

Front Panel Indicators

The following indicator LEDs provide power, activity, and status information:

- SYS—System status:
  - Blinking green during boot-up—System is booting
  - Continuous green—System booted and OK
  - Blinking green continuing after boot-up—System is in ROM monitor mode
  - Amber—System malfunction
- ACT—Activity:
  - Blinking or continuous green during system activity, such as interrupts and packet transfers
- SYS PS1 or SYS PS2—Chassis power supply number 1 or number 2 status:
  - Off—Powered off, not installed, or faulty
  - Continuous green—Installed and operating
  - Amber—Installed and powered off or faulty
- –48V PS1 or –48V PS2—IP power module number 1 or number 2 status:
  - Off—Faulty or not installed
  - Continuous green—Installed and operating
  - Amber—Installed and powered off or faulty

Power-Up Procedure

To power up your Cisco router and verify that it goes through its initialization and self-test, perform this procedure. When the power-up procedure is finished, the Cisco router is ready to be configured.

Note To view the boot sequence through a terminal session, you must have a console connection to the Cisco router before it powers on.

Step 1 Make sure that your PC is powered up and connected as described in the “Checklist for Power-Up” section.

Step 2 Move the power switch to the ON position. The fan operates, and the SYS PS LED is continuous green for each power supply that is in use. The SYS LED blinks while the system boots, and it is continuous green after the system boots. If this does not happen, see the power-on procedure in the *Cisco 3700 Series Hardware Installation Guide*.

Note If no Cisco IOS image is loaded on the Cisco 3745, the router enters ROMMON mode, and the system LED blinks.

Messages begin to appear in your terminal emulation program window.

Caution *Do not press any keys on the keyboard until the messages stop*. Any keys pressed during this time are interpreted as the first command typed when the messages stop, which might cause the router to power off and start over. It takes a few minutes for the messages to stop.

You may see different startup messages:

- If you see the following messages, the router has booted with a configuration file and is ready for initial configuration using the Cisco Router and Security Device Manager (SDM):

  ```
  yourname con0 is now available

  Press RETURN to get started.
  ```

  See the "Initial Configuration Using Cisco Router and Security Device Manager" section on page 19 to learn how to configure your router using SDM or to learn how to obtain SDM and install it on your router.

- If you see the following messages, the router has booted and is ready for initial configuration using the setup command facility or the command-line interface (CLI).

  ```
  --- System Configuration Dialog ---

  At any point you may enter a question mark '?' for help.
  Use ctrl-c to abort configuration dialog at any prompt.
  Default settings are in square brackets '[]'.

  Would you like to enter the initial configuration dialog? [yes/no]:
  ```

  To learn how to use the setup command facility to configure the router, see the "Initial Configuration Using the Setup Command Facility" section on page 19. To learn how to use the CLI to configure the router, see the "Initial Configuration Using the CLI (Manual Configuration)" section on page 21.

Note If the `rommon 1>` prompt appears, your system has booted in ROM monitor mode. For information on the ROM monitor, see the router rebooting and ROM monitor information in the *Cisco IOS Configuration Fundamentals Configuration Guide* for your Cisco IOS software release.

You can access this document at the locations described in the "Where to Go Next" section on page 24.

6 Perform Initial Configuration

You can configure your router by using one of the following methods:

- Cisco Router and Security Device Manager (SDM)—If your router was purchased with a VPN bundle, SDM is installed on the router. For instructions on configuring your router by using SDM, refer to the *Cisco Router and Security Device Manager (SDM) Quick Start Guide* that shipped with your router. See the "Initial Configuration Using Cisco Router and Security Device Manager" section on page 19 for additional information.
- Setup command facility—You can use the setup command facility to configure basic router information. After the configuration file has been created, you can use the CLI or SDM to perform additional configuration. See the "Initial Configuration Using the Setup Command Facility" section on page 19 for additional information.
- Command-line interface (CLI)—If you prefer to use the Cisco IOS CLI, see the "Initial Configuration Using the CLI (Manual Configuration)" section on page 21 for instructions on how to use the CLI.

Note You need to understand how interfaces are numbered so that you know which interface you are configuring. If you need help with interface and port numbering, see the "Interface Numbering" section on page 22.

Initial Configuration Using Cisco Router and Security Device Manager

If the following messages appear at the end of the startup sequence, Cisco Router and Security Device Manager (SDM) is installed on your router:

```
yourname con0 is now available

Press RETURN to get started.
```

For instructions on configuring your router by using SDM, refer to the *Cisco Router and Security Device Manager (SDM) Quick Start Guide*.

Tip If the messages above do not appear, SDM and the C*isco Router and Security Device Manager (SDM) Quick Start Guide* were not shipped with your router. If you want to use SDM, you can download the latest version of SDM and instructions for installing it on your router from the following location:

http://www.cisco.com/pcgi-bin/tablebuild.pl/sdm

To obtain the SDM quick start guide, SDM release notes, and other SDM documentation, go to *www.cisco.com/go/sdm* and click the Technical Documentation link.

Initial Configuration Using the Setup Command Facility

This section shows how to use the setup command facility to configure a host name for the router, set passwords, and configure an interface for communication with the management network. If you see the following messages at the end of the startup sequence, the setup command facility has been invoked automatically:

```
--- System Configuration Dialog ---

At any point you may enter a question mark '?' for help.
Use ctrl-c to abort configuration dialog at any prompt.
Default settings are in square brackets '[]'.

Would you like to enter the initial configuration dialog? [yes/no]:
```

The setup command facility prompts you for basic information about your router and network, and it creates an initial configuration file.The prompts vary, depending on your router model, the installed interface modules, and the software image. The following example and the user entries (in **bold**) are shown as examples only.

For interface numbering information, see the “Interface Numbering” section on page 22.

Note If you make a mistake while using the setup command facility, you can exit and run the setup command facility again. Press Ctrl-c, and enter setup at the privileged EXEC mode prompt (`3700#`).

Step 1 To proceed using the setup command facility, enter yes.

```
Would you like to enter the initial configuration dialog? [yes/no]: yes
```

Step 2 When the following messages appear, press Return to enter basic management setup:

```
At any point you may enter a question mark '?' for help.
Use ctrl-c to abort configuration dialog at any prompt.
Default settings are in square brackets '[]'.

Basic management setup configures only enough connectivity
for management of the system, extended setup will ask you
to configure each interface on the system
Would you like to enter basic management setup? [yes/no]: yes
```

Step 3 Enter a host name for the router (this example uses 3745):

```
Configuring global parameters:

  Enter host name [Router]: 3745

The enable secret is a password used to protect access to privileged EXEC and configuration modes. This
password, after entered, becomes encrypted in the configuration.
```

Step 4 Enter an enable secret password. This password is encrypted (more secure) and cannot be seen when viewing the configuration:

```
Enter enable secret: xxxx

The enable password is used when you do not specify an enable secret password, with some older software
versions, and some boot images.
```

Step 5 Enter an enable password that is different from the enable secret password. This password is *not* encrypted (less secure) and can be seen when viewing the configuration:

```
Enter enable password: xxxx

The virtual terminal password is used to protect access to the router over a network interface.
```

Step 6 Enter the virtual terminal password, which prevents unauthenticated access to the router through ports other than the console port:

```
Enter virtual terminal password: xxxx
```

Step 7 Respond to the following prompts as appropriate for your network:

```
Configure SNMP Network Management? [yes]: yes
    Community string [public]:
```

Step 8 A summary of the available interfaces is displayed:

Note The interface numbering that appears is dependent on the type of Cisco modular router platform and on the installed interface modules and cards.

```
Current interface summary

Controller Timeslots D-Channel Configurable modes Status
T1 3/0     24        23        pri/channelized    Administratively up
T1 3/1     24        23        pri/channelized    Administratively up

Any interface listed with OK? value "NO" does not have a valid configuration

Interface                  IP-Address      OK? Method Status                Protocol
FastEthernet0/0            unassigned      NO  unset  up                    down

FastEthernet0/1            unassigned      NO  unset  up                    down
```

Step 9 Select one of the available interfaces for connecting the router to the management network:

```
Enter interface name used to connect to the
management network from the above interface summary: fastethernet0/0
```

Step 10 Respond to the following prompts as appropriate for your network:

```
Configuring interface FastEthernet0/0:
  Use the 100 Base-TX (RJ-45) connector? [yes]:
  Operate in full-duplex mode? [no]: yes
  Configure IP on this interface? [yes]:
    IP address for this interface: 10.1.1.1
    Subnet mask for this interface [255.0.0.0] : 255.255.0.0
    Class A network is 10.0.0.0, 16 subnet bits; mask is /16
```

Step 11 After the following messages appear, press Return to save the basic configuration:

```
The following configuration command script was created:

hostname 3745
enable secret 5 $1$Ksjf$za4T2lb3ARS5d1PHVzW5A0
enable password xxxx
line vty 0 4
password xxxx
snmp-server community public
!
no ip routing

!
interface FastEthernet0/0
no shutdown
media-type 100BaseX
full-duplex
ip address 10.1.1.1 255.255.0.0
!
interface FastEthernet0/1
shutdown
no ip address
!
end


[0] Go to the IOS command prompt without saving this config.
[1] Return back to the setup without saving this config.
[2] Save this configuration to nvram and exit.

Enter your selection [2]: 2


Press RETURN to get started! RETURN
```

Step 12 The user prompt is displayed:

```
3745>
```

When you have completed the basic configuration tasks, your Cisco router is ready to configure for specific functions. See the “Where to Go Next” section on page 24 for information about locating documentation for advanced configuration procedures.

Initial Configuration Using the CLI (Manual Configuration)

This section shows how to bring up a command-line interface (CLI) prompt for configuration using the CLI, and it directs you to documentation for the CLI configuration.You can use the CLI if you see the following messages at the end of the startup sequence:

```
--- System Configuration Dialog ---

At any point you may enter a question mark '?' for help.
Use ctrl-c to abort configuration dialog at any prompt.
Default settings are in square brackets '[]'.

Would you like to enter the initial configuration dialog? [yes/no]:
```

If these messages do not appear, SDM and a default configuration file have been installed on the router at the factory. To use SDM to configure the router, see the “Initial Configuration Using Cisco Router and Security Device Manager” section on page 19.

For interface numbering information, see the “Interface Numbering” section on page 22.

Step 1 To proceed with manual configuration using the CLI, enter no.

```
Would you like to enter the initial configuration dialog? [yes/no]: no
```

Step 2 Press Return to terminate autoinstall and continue with manual configuration.

```
Would you like to terminate autoinstall? [yes] Return
```

Several messages are displayed, ending with a line similar to the following:

```
...
Copyright (c) 1986-2002 by cisco Systems, Inc.
Compiled date time by person
```

Step 3 Press Return to bring up the `Router>` prompt.

```
...
flashfs[4]: Initialization complete.
Router>
```

Step 4 Enter privileged EXEC mode.

```
Router> enable
Router#
```

Note To avoid losing work you have completed, be sure to save your configuration occasionally as you proceed. Use the copy running-config startup-config command to save the configuration to NVRAM.

For configuration using the CLI, refer to the applicable configuration procedures in the *Software Configuration Guide: Cisco 2600 Series, Cisco 3600 Series, and Cisco 3700 Series Routers*. See the "Where to Go Next" section on page 24 for information about accessing this document.

7 Interface Numbering

Each individual interface (port) on a Cisco 3745 router is identified by number as described in the following sections.

WAN and LAN Interface Numbering

The Cisco 3745 router chassis contains the following WAN and LAN interface types:

- 2 built-in FastEthernet LAN interfaces
- 3 slots in which you can install WAN or voice interface cards
- 4 network module slots

The numbering format is:

- *Interface-type Slot-number*/*Interface-number*

  Two examples are: `FastEthernet 0/0` and `Serial 1/2`.

The slot numbers are as follows:

- 0 for all built-in interfaces
- 0 for all WIC interfaces
- 1 for the lower-right network module slot
- 2 for the lower-left network module slot
- 3 for the upper-right network module slot
- 4 for the upper-left network module slot

If double-width network modules are installed, the network module slots are numbered as follows:

- 2 for the lower double-width slot
- 4 for the upper double-width slot

Interface (port) numbers begin at 0 for each interface type, and continue from right to left and from bottom to top.

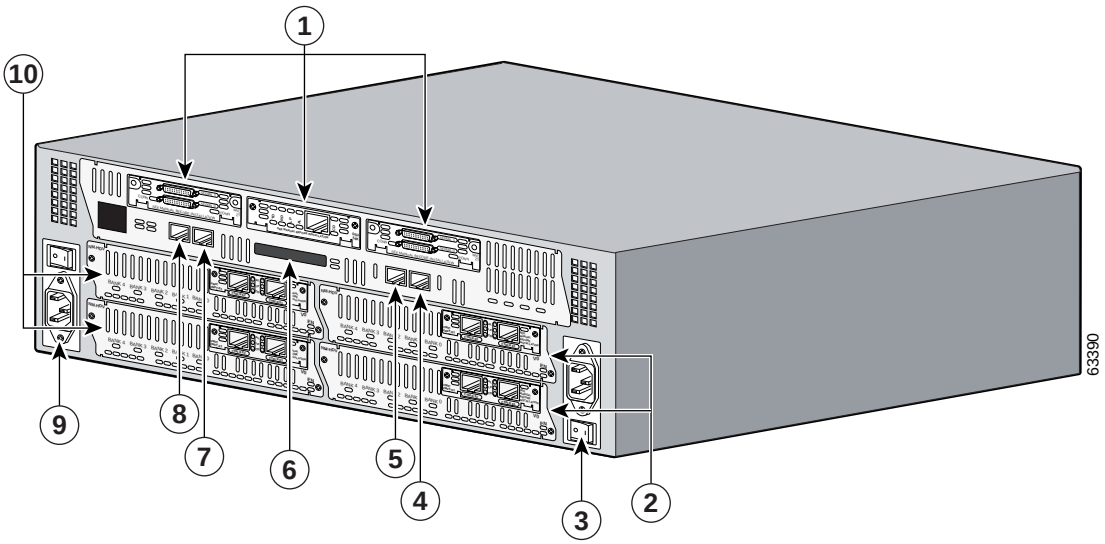
Figure 7 shows the rear panel of the Cisco 3745 with:

- A WIC in each of the three WAN interface card slots
- A single-width network module in each of the four network module slots
- Two AC power supplies

Note The slot number for all WIC interfaces is always 0. (The W0, W1, and W2 slot designations are for physical slot identification only.) Interfaces in the WICs are numbered from right to left, starting with 0/0 for each interface type, regardless of which physical slot the WICs are installed in. Some examples are:

- If physical slot W0 is empty and physical slot W1 contains a 1-port serial WIC, the serial interface in the WIC is numbered Serial 0/0.
- If slot W0 contains a 2-port serial WIC and slot W1 contains a 1-port serial WIC, the serial interfaces in physical slot W0 are numbered Serial 0/0 and Serial 0/1, and the serial interface in physical slot W1 is numbered Serial 0/2.
- If slot W0 contains a 2-port serial WIC and slot W1 contains a 1-port BRI WIC, the serial interfaces in physical slot W0 are numbered Serial 0/0 and Serial 0/1, and the BRI interface in physical slot W1 is numbered BRI 0/0.

Figure 7 Cisco 3745 Rear Panel



1	Interface card slots	**6**	Cisco 3700 Compact Flash slot
2	Network modules	**7**	Auxiliary port
3	Power supply	**8**	Console port
4	FastEthernet 0/0	**9**	Power supply
5	FastEthernet 0/1	**10**	Network modules

Voice Interface Numbering

Voice interfaces are numbered differently from the WAN interfaces described in the previous section. Voice interfaces are numbered as follows:

network-module-slot/voice-module-slot/voice-interface

If a 4-channel voice network module is installed in chassis slot 1, the voice interfaces are:

- 1/0/0—Network module slot 1/Voice module slot 0/Voice interface 0
- 1/0/1—Network module slot 1/Voice module slot 0/Voice interface 1
- 1/1/0—Network module slot 1/Voice module slot 1/Voice interface 0
- 1/1/1—Network module slot 1/Voice module slot 1/Voice interface 1

8 Where to Go Next

For additional detailed configuration procedures, refer to the appropriate Cisco 3700 series documentation or Cisco IOS software documentation, available on-line on Cisco.com.

Tip See the "Obtaining Documentation" section on page 24 for help in locating these documents.

To access documentation on Cisco.com:

For Cisco 3700 series platform documentation, start on Cisco.com at http://www.cisco.com, and select Products & Services > Routers > Cisco 3700 Series Multiservice Platforms > Technical Documentation > *Document type* > *Document*.

For Cisco IOS software documentation, start on Cisco.com at http://www.cisco.com, and select Products & Services > IOS Software > Cisco IOS Software Releases > *Your Cisco IOS software release*.

To get updated information about platform support for features, select Feature Navigator II, if you have an account on Cisco.com. You can also access Feature Navigator II at http://www.cisco.com/go/fn.

To access documentation using Cisco Connection Online (CCO):

For Cisco 3745 platform documentation, start on Cisco.com at http://www.cisco.com, and click on the "Technical Documentation" tab under Useful Links. Under the Product Documentation heading, navigate to Modular Access Routers and to the documentation for your router.

For Cisco IOS software documentation, start on Cisco.com at http://www.cisco.com, and click on the "Technical Documentation" tab under Useful Links. Under the Product Documentation heading, navigate to the Cisco IOS software documentation for the Cisco IOS software release that is installed on your router.

9 Obtaining Documentation

Cisco documentation and additional literature are available on Cisco.com. Cisco also provides several ways to obtain technical assistance and other technical resources. These sections explain how to obtain technical information from Cisco Systems.

Cisco.com

You can access the most current Cisco documentation at this URL:

http://www.cisco.com/univercd/home/home.htm

You can access the Cisco website at this URL:

http://www.cisco.com

You can access international Cisco websites at this URL:

http://www.cisco.com/public/countries_languages.shtml

Ordering Documentation

You can find instructions for ordering documentation at this URL:

http://www.cisco.com/univercd/cc/td/doc/es_inpck/pdi.htm

You can order Cisco documentation in these ways:

- Registered Cisco.com users (Cisco direct customers) can order Cisco product documentation from the Ordering tool:

  http://www.cisco.com/en/US/partner/ordering/index.shtml
- Nonregistered Cisco.com users can order documentation through a local account representative by calling Cisco Systems Corporate Headquarters (California, USA) at 408 526-7208 or, elsewhere in North America, by calling 800 553-NETS (6387).

10 Documentation Feedback

You can send comments about technical documentation to bug-doc@cisco.com.

You can submit comments by using the response card (if present) behind the front cover of your document or by writing to the following address:

Cisco Systems
Attn: Customer Document Ordering
170 West Tasman Drive
San Jose, CA 95134-9883

We appreciate your comments.

11 Obtaining Technical Assistance

For all customers, partners, resellers, and distributors who hold valid Cisco service contracts, Cisco Technical Support provides 24-hour-a-day, award-winning technical assistance. The Cisco Technical Support Website on Cisco.com features extensive online support resources. In addition, Cisco Technical Assistance Center (TAC) engineers provide telephone support. If you do not hold a valid Cisco service contract, contact your reseller.

Cisco Technical Support Website

The Cisco Technical Support Website provides online documents and tools for troubleshooting and resolving technical issues with Cisco products and technologies. The website is available 24 hours a day, 365 days a year at this URL:

http://www.cisco.com/techsupport

Access to all tools on the Cisco Technical Support Website requires a Cisco.com user ID and password. If you have a valid service contract but do not have a user ID or password, you can register at this URL:

http://tools.cisco.com/RPF/register/register.do

Submitting a Service Request

Using the online TAC Service Request Tool is the fastest way to open S3 and S4 service requests. (S3 and S4 service requests are those in which your network is minimally impaired or for which you require product information.) After you describe your situation, the TAC Service Request Tool automatically provides recommended solutions. If your issue is not resolved using the recommended resources, your service request will be assigned to a Cisco TAC engineer. The TAC Service Request Tool is located at this URL:

http://www.cisco.com/techsupport/servicerequest

For S1 or S2 service requests or if you do not have Internet access, contact the Cisco TAC by telephone. (S1 or S2 service requests are those in which your production network is down or severely degraded.) Cisco TAC engineers are assigned immediately to S1 and S2 service requests to help keep your business operations running smoothly.

To open a service request by telephone, use one of the following numbers:

Asia-Pacific: +61 2 8446 7411 (Australia: 1 800 805 227)
EMEA: +32 2 704 55 55
USA: 1 800 553 2447

For a complete list of Cisco TAC contacts, go to this URL:

http://www.cisco.com/techsupport/contacts

Definitions of Service Request Severity

To ensure that all service requests are reported in a standard format, Cisco has established severity definitions.

Severity 1 (S1)—Your network is "down," or there is a critical impact to your business operations. You and Cisco will commit all necessary resources around the clock to resolve the situation.

Severity 2 (S2)—Operation of an existing network is severely degraded, or significant aspects of your business operation are negatively affected by inadequate performance of Cisco products. You and Cisco will commit full-time resources during normal business hours to resolve the situation.

Severity 3 (S3)—Operational performance of your network is impaired, but most business operations remain functional. You and Cisco will commit resources during normal business hours to restore service to satisfactory levels.

Severity 4 (S4)—You require information or assistance with Cisco product capabilities, installation, or configuration. There is little or no effect on your business operations.

12 Obtaining Additional Publications and Information

Information about Cisco products, technologies, and network solutions is available from various online and printed sources.

- Cisco Marketplace provides a variety of Cisco books, reference guides, and logo merchandise. Visit Cisco Marketplace, the company store, at this URL:

  http://www.cisco.com/go/marketplace/

- The Cisco *Product Catalog* describes the networking products offered by Cisco Systems, as well as ordering and customer support services. Access the Cisco Product Catalog at this URL:

  http://cisco.com/univercd/cc/td/doc/pcat/

- *Cisco Press* publishes a wide range of general networking, training and certification titles. Both new and experienced users will benefit from these publications. For current Cisco Press titles and other information, go to Cisco Press at this URL:

  http://www.ciscopress.com

- *Packet* magazine is the Cisco Systems technical user magazine for maximizing Internet and networking investments. Each quarter, Packet delivers coverage of the latest industry trends, technology breakthroughs, and Cisco products and solutions, as well as network deployment and troubleshooting tips, configuration examples, customer case studies, certification and training information, and links to scores of in-depth online resources. You can access Packet magazine at this URL:

  http://www.cisco.com/packet

- *iQ Magazine* is the quarterly publication from Cisco Systems designed to help growing companies learn how they can use technology to increase revenue, streamline their business, and expand services. The publication identifies the challenges facing these companies and the technologies to help solve them, using real-world case studies and business strategies to help readers make sound technology investment decisions. You can access iQ Magazine at this URL:

  http://www.cisco.com/go/iqmagazine

- *Internet Protocol Journal* is a quarterly journal published by Cisco Systems for engineering professionals involved in designing, developing, and operating public and private internets and intranets. You can access the Internet Protocol Journal at this URL:

  http://www.cisco.com/ipj

- World-class networking training is available from Cisco. You can view current offerings at this URL:

  http://www.cisco.com/en/US/learning/index.html

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